

REMARKS

By this amendment, claims 3 and 6 have been canceled. Claims 1, 15, 16 and 17 have been amended. Claims 1-2, 4-5 and 7-17 remain in the application. This application has been carefully considered in connection with the Examiner's Action. Reconsideration, withdrawal of the final action, and allowance of the application, as amended, is requested.

Objection to the Claims

Claim 6 was objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. With respect to claim 6, the same has been canceled herein, thus rendering the objection thereof now moot.

Rejection under 35 U.S.C. §103

Claims 1-4 and 6-13 and 15-17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Wilinski et al. (WIPO Publication No. 02/095680; hereinafter "**Wilinski**") in view of Zheng et al. (0. Zheng, R. Chellappa; Estimation of Illuminant Direction, Albedo, and Shape from Shading; IEEE Transactions of Pattern Analysis and Machine Intelligence, Vol. 13, July 1991; hereinafter "**Zheng**") and Wu et al. (Z. Wu, L.Li; A Line-Integration Based Method for Depth Recovery from Surface Normals; IEEE, November 1988; hereinafter "**Wu**"). With respect to claims 3 and 6, the same have been canceled herein, thus rendering the rejection thereof now moot. With respect to claim 1, Applicant respectfully traverses this rejection on the grounds that these references are defective in establishing a prima facie case of obviousness.

Independent claim 1 recites, inter alia, computing a cost value for a *first* one of the pixels of the image by accumulating differences between luminance and/or color and/or color component values of *pairs* of neighboring connected pixels at *transitions* which are *disposed on the path from the first one of the pixels to a second one of the*

pixels, wherein the *second one* of the pixels belongs to a *predetermined subset* of the pixels of the image; and *assigning a depth value* corresponding to the *first one* of the pixels *on basis of* the computed *cost value*. Support for claim 1 (as well as claims 15-17) can be found in the specification at least on page 2, lines 11-25; page 6, line 30-34; page 7, line 1-9, and 20-23; page 8, lines 18-22 (equation 1); page 9, lines 21-24; and FIG. 1.

Applicant submits that neither **Wilinski**, **Zheng**, nor **Wu** discloses at least the aforementioned feature of independent claim 1. In particular, it is submitted that the citation to **Wu** does not remedy the conceded deficiency in the citation to both **Wilinski** and **Zheng**. Accordingly, without conceding the propriety of the asserted combination, the asserted combination of **Wilinski**, **Zheng**, and **Wu** is likewise deficient, even in view of the knowledge of one of ordinary skill in the art.

The Office Action concedes that, with respect to the citation of **Wilinski** and **Zheng**, neither **Wilinski** nor **Zheng** teach "computing a cost value for a *first one* of the pixels of the image by accumulating differences between luminance and/or color and/or color component values of *pairs* of neighboring connected pixels at *transitions* which are *disposed on [the] path from the first one of the pixels to a second one of the pixels*, wherein the *second one* of the pixels belongs to a *predetermined subset* of the pixels of the image; and *assigning a depth value ... corresponding to the first one of the pixels on basis of the computed cost value*" (emphasis added) (See Office Action, page 12, line 20 to page 13, line 9). Nonetheless, the Office Action rejects independent claim 1, contending that **Wu** provides this necessary disclosure (See Office Action, page 13, lines 16-18). It is noted that the Office Action further contends that "since depth determination disclosed in **Zheng** is a relative depth between the two segments delimited by the contour, the *only way* to determine the depth for a particular pixel belonging to such a segment is to measure that relative depth with respect to all such

segments" (emphasis added) and further indicating that "it would have been obvious one of ordinary skill in the art at the time of the invention to examine the different transitions along a path from the pixel to one of the edges of the image and to sum this difference which translate in depth differences as taught by Zheng" (See Office Action page 13, line 9-16). This contention is respectfully traversed.

Wu relates to a line-integration based method for depth recovery from *surface normals*. In the method of Wu, an *arbitrary depth must be first preset* for a point somewhere in the image, then path-independent line integrals are computed to get the relative depths at every point in the image (emphasis added) (See Wu, abstract). In addition, the method of **Wu** supposes that "the local surface orientation of an object ... is known at every point (x,y) in an image" and that "the actual shape of the object can be described using its depth or its height, z, above the xy-plane." (See Wu, page 591, at column 2, II.) Thus, **Wu** does not provide a disclosure that remedies the aforementioned, conceded deficiency in the citation to **Wilinski** and **Zheng**. Thus, a *prima facie* case of obviousness has clearly not been met, and the rejection under 35 U.S.C. §103 should be withdrawn.

Accordingly, claim 1 is allowable and an early formal notice thereof is requested. Claims 2, 4 and 7-13 depend from and further limit independent claim 1 and therefore are allowable as well. The 35 U.S.C. §103(a) rejection thereof has now been overcome. Withdrawal of the rejection is respectfully requested.

Claims 15, 16 and 17 contain limitations similar to those of claim 1. Accordingly, for similar reasons as stated with respect to overcoming the rejection of claim 1, claims 15, 16 and 17 are believed allowable and an early formal notice thereof is requested. The 35 U.S.C. § 103(a) rejection thereof has now been overcome. Withdrawal of the rejection is respectfully requested.

Claim 5 stands rejected under 35 U.S.C. §103(a) as being unpatentable over **Wilinski** in view of **Zheng** and **Wu** as applied to claim 1 above, and further in view of Cahill et al. (U.S. Patent Publication No. 2004/0062439, hereinafter "**Cahill**"). Applicant respectfully traverses this rejection for at least the following reason. Claim 5 depends from and further limits allowable independent claim 1 and therefore is allowable as well. The 35 U.S.C. §103(a) rejection thereof has now been overcome. Withdrawal of the rejection is requested.

Claim 14 stands rejected under 35 U.S.C. §103(a) as being unpatentable over **Wilinski** in view of **Zheng** and **Wu** as applied to claim 12 above, and further in view of Nakatsuna et al. (U.S. Patent Publication No. 2002/0154116; hereinafter "**Nakatsuna**"). Applicant respectfully traverses this rejection for at least the following reason. Claim 14 depends from and further limits dependent claim 12, which is dependent from allowable independent claim 1 and therefore is allowable as well. The 35 U.S.C. §103(a) rejection thereof has now been overcome. Withdrawal of the rejection is requested.

Conclusion

Except as indicated herein, the claims were not amended in order to address issues of patentability and Applicants respectfully reserve all rights they may have under the Doctrine of Equivalents. Applicants furthermore reserve their right to reintroduce subject matter deleted herein at a later time during the prosecution of this application or a continuation application.

It is clear from all of the foregoing that independent claims 1, 15, 16 and 17 are in condition for allowance. Claims 2, 4-5 and 7-14 depend from and further limit independent claim 1 and therefore are allowable as well.

The amendments herein are fully supported by the original specification and drawings; therefore, no new matter is introduced. Withdrawal of the final action and issuance of an early formal notice of allowance of claims 1-2, 4-5 and 7-17 is requested.

Respectfully submitted,

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